Flight School Applicants
Refractive Surgery Fact Sheet (Amended/Updated November 2005)

What: LASIK (laser in-situ keratomileusis) is disqualifying for Army Aviation in accordance with Army regulation 40-501. The purpose of the program at USAARL is to determine whether LASIK surgery should be considered as an option for Army Aviators, specifically new accessions to Army Aviation. The program is designed to screen and monitor individuals entering flight school who have had LASIK. The surgery is not provided as part of the program, therefore if you have not had surgery you are responsible for all the arrangements necessary to receive refractive surgery. LASIK is the only procedure considered for an exception to policy & waiver under this program.

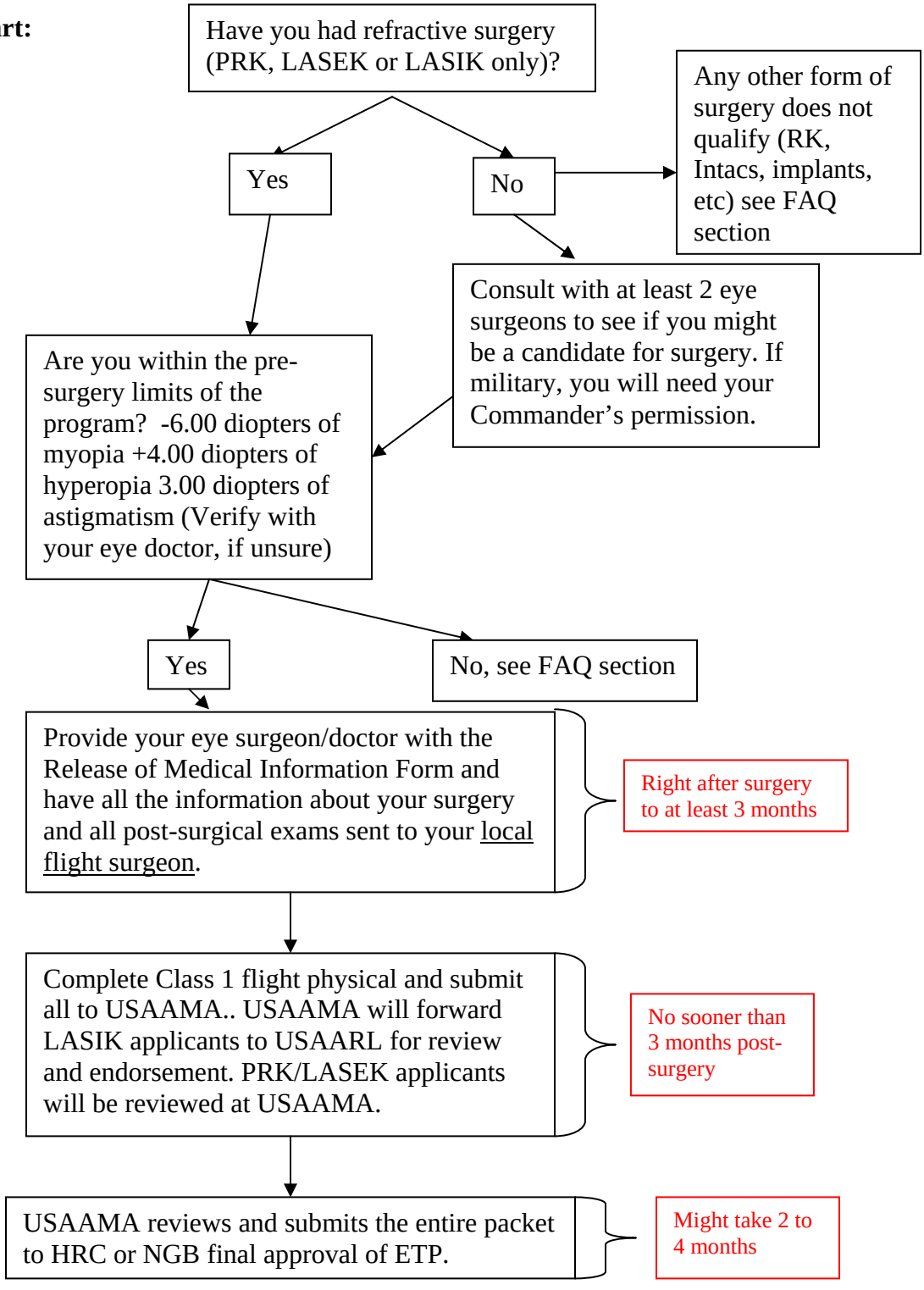
Laser Subepithelial Keratomileusis (LASEK) is considered as a variant of PRK. Both are aeromedically allowed provided the post-surgical outcome meets standards IAW the current Corneal Refractive Surgery APL, revised November 2005. It is important for all applicants to do research on the Internet, or elsewhere, about the differences between the types of surgeries. The US Army Aeromedical Research Laboratory (USAARL) study was initiated in February 2001 and was closed to new applicants as of 1 October 2004. Soon, a decision will be made as to whether LASIK should also be considered for Army Aviation, along side PRK and LASEK. Until such a decision is made, USAARL will continue to see LASIK applicants under a modified protocol set forth by USAARL and accepted by USAAMA.

Who: The program applies to individuals who meet all other requirements for flight school, except for the presence of LASIK. Active duty, Reserve, National Guard, ROTC, Academy cadets, OCS candidates, and civilians are all eligible to submit for an exception to policy for LASIK. Qualifying for an exception to policy does NOT guarantee a flight school slot; it only verifies your medical eligibility to apply for flight school given the presence of a disqualifying procedure. You will need to coordinate with your eye surgeon and/or eye clinic to complete the visual exam forms needed for your exception to policy (see "Release of Medical Information" form). You will need to work with a flight surgeon to complete the Class 1 flight physical. Finally, you will need to work through the standard channels to apply to flight school with your recruiter and/or the Aviation branch.

How, When and Where: This section describes the steps you will need to accomplish in order to receive an exception to policy for LASIK surgery. PRK and LASEK patients should consult their local flight surgeon to complete their flight physical--an exception to policy is no longer needed for these procedures provided the post-surgical outcome is otherwise within standards. Complete the Class 1 flight physical and submit to USAAMA with all of the eye surgery and post-operative reports requested below. USAAMA will forward the LASIK applicants to USAARL for review and endorsement for exception to policy (ETP). The ETP endorsement is returned to the US Army Aeromedical Activity (USAAMA), which reviews that and all other medical information in the Class 1 flight physical. If acceptable, USAAMA will recommend an ETP and submit it to the waiver authority (either HRC or NGB, depending on their status). Once the exception to policy is approved at the waiver authority, their medical qualification is provided to the board or agency working your flight school application, and you are

eligible to compete for the slot. A flow diagram is provided to help you work through the process of obtaining an ETP.

Flowchart:



Points of Contact:

USAARL – Research staff at 334-255-6810/6014

USAAMA – 334-255-7430 http://usasam.amedd.army.mil/_aama/index.htm

Recruiting Command www.usarec.army.mil/hq/warrant/warrant.htm

Warrant Officer Flight Training Program (civilians, NG or Reservists) – 502-626-0467/1554

Active duty (Army, AF, Navy, Marine or Coast Guard) – 502-626-0458

Army Branch Officer applying to aviation needing a branch transfer – https://www.perscomonline.army.mil/opavn/Branch%20Transfers.htm

Aviation Proponency – http://www-rucker.army.mil/ap/default.htm

or 334-255-3999/2359

FAQs: After reviewing this section of frequently asked questions and the flowchart, if you still need further clarification, call the Refractive Surgery Research Team at USAARL.

1. Questions about surgery and the eye information needed by USAARL

a. If I had a surgery other than PRK, LASEK or LASIK, can I still get an exception to policy? No, the program only applies to the listed corneal refractive surgery procedures. If you have had radial keratotomy (RK), intrastromal corneal rings (Intacs) or any other type of refractive surgery, you will not qualify for an exception to policy.

b. If I have NOT had refractive surgery yet, what do I do? Follow the steps in the flowchart. You should consult at least 2 eye surgeons before deciding to get surgery. It is also important to do individual research as to the pros and cons of each type of surgery.

c. How can I verify if I meet the limits of the program? Consult with your eye doctor. He/she will review your current eyeglass or contact lens prescription (if you have not had surgery) or records of your eyeglass or contact lens prescription before surgery (if you have already had surgery). Provide your eye doctor with the limits listed in the flowchart to help them in the review (-6.00 diopters myopia, +4.00 diopters hyperopia, or 3.00 diopters astigmatism).

d. My refraction is outside the limits of the program, is it still possible to enter the study? Possibly. The limit is based on the correction that is programmed into the laser, not your eyeglass prescription, so you may actually be within the limits of the program. Your eye surgeon should be able to provide the required laser information to your flight surgeon. They will review the laser records (or the planned correction the surgeon provides you) and determine whether you are within limits.

e. What information do I need to provide about my surgery and where do I get it? All the information needed is listed on the “Release of Medical Information” form. Provide the form to your eye surgeon and/or the eye doctor who is providing your vision care after surgery. You may have to submit multiple forms to get all of the required information.

1. Surgical Information: Your eye surgeon will need to fill out the information about the laser, the type of surgery and the amount of correction.

2. Manifest Refraction: You will need three post-surgical refractions (measures of any residual prescription) and three visual acuities. This information can be a combination of examinations provided by your surgical center, your optometry office and your flight physical.

3. Corneal Exam: You will need verification that your cornea is clear of haze or any other post-surgical complication. Your eye doctor can provide this information.

4. Corneal Topography: This is the corneal map that shows the shape of your cornea after surgery. You must have a color copy of the map, either mailed, e-mailed, or taken to your flight surgeon. FAX'd versions are not acceptable because they come through in black and white.

5. Contrast Sensitivity: This is a measure of your vision under low contrast conditions (5% is the preferred method). Ask your eye doctor about availability of a contrast sensitivity or low contrast acuity test in your area. Examples of acceptable tests are:

VisTech Contrast Grating Test
Functional Acuity Contrast Test (F.A.C.T.)
Pelli-Robson Contrast Sensitivity Test
Bailey-Lovie 10% low contrast acuity chart
ETDRS low contrast acuity chart (5% is preferred)
Mentor BVAT low contrast acuity chart (set on 5%)

f. What do I do if a contrast sensitivity or low contrast acuity test is not available in my area? Your packet can be processed without this test, **if** the other eye information you provide indicates a good outcome from the surgery (specifically the corneal topography and corneal exam). The principal investigator for the refractive surgery program or your flight surgeon will make this determination and you will be informed if a contrast test is required in your case. Make sure your eye doctor notes on the form that these tests are not available to you.

g. Where do I send all of my information if I've had LASIK? Send all info to USAAMA. Or you can **fax** everything to **334 255-7030 or 7606**, except the corneal topography, which must be in **color** and must be mailed or emailed. Your original flight physical must be sent to this address, faxed to this number, or be verified that it has been entered into the AERO database for flight surgeons.

****ATTENTION ALL APPLICANTS: ALL REQUIRED INFORMATION SENT TO USAAMA/USAARL MUST BE COMPLETE!** You will be subject to a returned/delayed packet if you do not follow these instructions.**

2. Questions about the flight physical

a. How long do I have to wait after surgery to get a flight physical? You should wait at least one month after surgery before starting your flight physical for your vision to stabilize.

b. I already took a flight physical before surgery; do I have to take another physical? No, as long as your initial Class 1 flight physical is still valid (18 months). You MUST repeat the eye exam portion of the flight physical after surgery, however. Coordinate this through your flight surgeon and the supporting eye clinic.

c. I have not taken a general military entrance physical yet; do I have to do that first? Yes, if you have not taken the MEPS, ROTC or other entrance physical, you will have to complete that physical before scheduling your flight physical. The entrance physicals require a 90-day waiting period after refractive surgery. Therefore you will have to wait **3 months** after surgery, take the entrance physical, and then you can schedule to take the flight physical. You will have to coordinate this with your recruiter. Go to the link "Refractive Surgery" on the USAARL website (www.usaarl.army.mil) to find the current Army Surgeon General's policy.

d. I still need to wear glasses after surgery; does that mean I will fail the flight physical? No, as long as you meet the general entry standards for Class 1 which include 20/50 or better uncorrected visual acuity, and no more than –1.50 diopters of myopia or +3.00 diopters of hyperopia or 1.00 diopters of astigmatism. If you are outside of these limits, however, you will not pass your flight physical. You should consult with your eye doctor and flight surgeon if this is the case.

3. Questions about the exception to policy process for LASIK only

a. How long does it take to get an exception to policy approved for LASIK? From the time USAARL/USAAMA submits the ETP request for final approval by HRC or NGB can take up to 4 months. If you are just getting surgery, you will have to add 3 months to that timeline (**7 months**). If you have not had an entrance physical, you may have to add more time (see 2c). ****** PRK applicants obtaining a local waiver will have a considerably shorter amount of waiting time.

b. What can I do to speed up the process? Insure that all required paperwork for LASIK is completed and sent directly to USAAMA. This includes the eye information provided by your eye doctor and the flight physical completed by your flight surgeon. If you are National Guard, have your State Aviation Officer contact the NGB to verify with the waiver authority that they want you to become a pilot.

c. What can I do while waiting for the exception to policy to be approved? Complete your flight application so that when the exception to policy is approved at HRC or NGB you will be able to compete for or obtain a flight school slot. Work with your recruiter or the Aviation Branch to complete this part of the process.

4. Questions about the program

a. If I have an exception to policy and a flight school slot, do I still need to participate in the USAARL research program? Yes, if you have had LASIK, one of the conditions of the exception to policy is that your vision is monitored while you are in

flight school. If you have had PRK/LASEK, you are not required to participate in this program.

b. What will be expected of me as a participant in the program? You will go through **two** vision exams at USAARL during the course of your flight training. This amount was amended at the end of the actual "study." You will not be dilated for these exams.

c. What do I do when I get to Ft Rucker for flight school? Before you start flight school, but after finishing WOC or other training, you will contact USAARL at **334-255-6810** to schedule your first eye exam.

d. What if while I'm in flight school a decision is made not to allow individuals with LASIK into flight school? Will I be kicked out? Each individual will be considered on a case-by-case basis. If your vision is good and you are passing flight school, most likely you will be allowed to continue.

e. If I qualify for the program am I guaranteed I spot in flight school? No, qualifying for an exception to policy only waives your disqualification due to the LASIK surgery. All other criteria in the flight physical and for flight school must still be met (including age, flight school eligibility, etc). If you are qualified in all other areas then you can compete for a slot in flight school against all other applicants. Being a participant in the program does not guarantee a slot. For more information about the requirements for flight school contact your Point of Contact for aviation recruiting, this information is above in the Point of Contact section.

Request for Release of Medical Records
(completed by applicant and provided to eye care provider for completion)

From: (enter your information) Date:

To: (enter eye clinic information)

Subject: Request for records related to refractive surgery procedure

1. I am participating in a research program of refractive surgery in the military. Request a copy of records pertaining to my refractive surgery be provided to your flight surgeon.

2. The following information is needed:

    1. Date of procedure
    2. Type of procedure (PRK or LASIK)
    3. Type of laser (brand name)
    4. Ablation parameters (size of ablation zone, microns of tissue removed, number of pulses)
    5. Amount of correction (sphere, cylinder and axis)
    6. Pre-operative refraction and date (specify manifest or cycloplegic)
    7. Follow-up refractions with visual Acuities and dates (most current refraction and as many postoperative refractions as possible)
    8. Subjective assessment of corneal clarity (haze)
    9. Latest **post-operative** corneal topography in <u>COLOR</u> (instantaneous or tangential corneal maps)
    10. Contrast Sensitivity (or low contrast acuity—preferred 5% contrast)

3. Please contact USAAMA/USAARL's POC if you have any questions.

_____ _____

Typed or Printed Name of Applicant Signature of Applicant

Demographics Required (Applicant to complete):

Last Name: _____ First Name: _____ M.I. ____
Mailing Address: _____
_____
E-mail Address: _____
Home/Cellular Phone: _____
Date of Birth: _____ SSN: _____

Checklist for Eye Care Provider (Surgeon/Doctor to complete below):

Surgeon/Doctor's Name: _____
Clinic Address: _____
Clinic Phone: _____ Clinic Name: _____

Date of Procedure: _____ Type: (circle one) PRK or LASIK
Laser Used: (Manufacturer) _____ (Model#) _____

Ablation Parameters (Complete below, and if available, attach copies of laser printouts)
OD: Size of ablation: _____mm Tissue removed: _____microns # of pulses: _____
OS: Size of ablation: _____mm Tissue removed: _____microns # of pulses: _____

Amount of correction programmed into laser
OD: _____ OS: _____

Pre-operative Refraction
OD: _____ OS: _____

Did the applicant require any enhancement procedures? Yes _____ No _____
(If yes, provide details as above & below)

Follow-up Examinations (include most recent and 2 prior examinations—3 total)

Date:	Refraction:	Visual Acuity	Corneal Haze* (circle one)
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4

***Haze 0-4 scale:** 0=No Haze, 1=Trace, 2=Minimal, 3-Moderate, 4=Iris details obscured.

Checklist for Eye Care Provider (post-operative continued)

Corneal Topography (include a color copy of most recent post-operative corneal topography using the TANGENTIAL or INSTANTANEOUS map display option)

Topographer Manufacturer: _____
Topographer Model: _____
Date of topographies: _____

Contrast Sensitivity (attach copy of post-operative results, if test available)

Test Manufacturer/Model: _____
Date of contrast test: _____

Test Conditions:
Room Lights On? (circle one) Yes No
Backlit Chart? (circle one) Yes No
Distance to Test? _____ m
% Contrast? (if letters) _____%

Results:
OD: _____
OS: _____

Does applicant report any subjective visual changes? (i.e. increased glare, starbursts, halos, etc.)
_____
_____

***For Class 1A/1W** (MUST complete a post-operative cycloplegic refraction, noting normal refractive DVA/NVA with best correction, and IOP's if your 1A/1W FDME data was pre-operative.)

Distant Vision	Near Vision
OD 20/_____ Corrected to 20/_____	20/_____ Corrected to 20/_____
OS 20/_____ Corrected to 20/_____	20/_____ Corrected to 20/_____

Cycloplegic Refraction

OD: _____ OS: _____

Intraocular Tension

OD: _____ OS: _____

Thank you for completing the information. Please return this form and supporting documents to your flight surgeon.

CORNEAL REFRACTIVE SURGERY (ICD9 V802A/V802B)

Revision October 2005

This policy has been revised to reflect current changes in the management and processing of waivers and exception to policies since the acceptance of LASIK, PRK, and LASEK for initial applicants and rated aviation personnel. Uncomplicated and successful completion of LASEK or PRK to improve visual acuity with normal post-surgical assessment as outlined below will not require a waiver or exception to policy—it will be annotated as ***information only***.

LASIK, still under investigational protocols, requires a waiver/exception to policy for aviation personnel.

It is not the intent of this policy to obligate any resources not readily available or to serve as swaying personnel to one type of surgery or another. All three elective surgical techniques still require the same post-operatively evaluations and tests—the only difference for the flight surgeon/APA is submission on the DD2808 for PRK and LASEK, or in the form of an abbreviated AMS for LASIK.

AEROMEDICAL CONCERNS:

Corneal refractive surgery is indicated for the correction of refractive error (myopia, hyperopia or astigmatism). Although there are presently five broad categories of corrective procedures, only three are currently acceptable aeromedically and may be considered as outlined above:

1. Surface altering procedures - photorefractive keratectomy (PRK) and laser epithelial keratomileusis (LASEK)
2. Lamellar procedures - laser-assisted in situ keratomileusis (LASIK)

Unacceptable aeromedical procedures are as follows and will not be considered for wavier at present:

1. Intracorneal procedures - intracorneal ring (ICR) implants
2. Intraocular procedures - anterior or posterior chamber intraocular lens (IOL)
3. Incisional procedures - radial keratotomy (RK)
4. Elective monocular surgical corrective procedures of any type where the outcome alters depth perception

Currently, LASIK is the most common of these procedures. PRK and LASIK have similar results in uncorrected visual acuity improvement at 6 months but differ in technique and immediate post-operative results. Noted information regarding the three aeromedically allowable procedures are as follows:

PRK - removing the corneal epithelium followed by the application of a series of fine laser ablations to re-sculpt the cornea. PRK lases through the basement membrane of the surgically removed epithelium and sculpts the corneal stroma to an average depth of 70microns (typical corneal depth 550 microns). During the first weeks after the procedure the surface epithelium must repopulate the corneal surface and during this period there is discomfort and fluctuating vision. Some studies suggest there is increased

risk of haze at the treated interface with increased ultraviolet exposure due to the destruction of the basement membrane even years later.

LASEK - similar to PRK in its depth of corneal involvement, but utilizes a flap technique similar to LASIK (see below). The epithelial flap is made with a 70 micron deep pre-incision and the flap is removed mechanically after treatment with a dilute alcohol solution. After flap displacement, an excimer laser sculpts the corneal stroma. One benefit to this procedure is that post surgical flap displacement, while more likely due to the thinness of the flap, is actually less likely to cause permanent vision change as compared to the thicker (deeper) LASIK flap.

LASIK - a surgical blade is used to create a hinged flap approximately 160microns thick. This flap is laid back and the stromal bed treated with the laser. When the flap is repositioned, vision is generally excellent immediately and there is no significant discomfort. LASIK has the theoretic risk of displacement of this flap, however preliminary basic science studies and clinical studies in the Airborne and Ranger student populations as well as the experience in the civilian population does not seem to support this concern as being of any operational or clinical relevance. The incidence of displacement of the flap is extremely low and the risk decreases with time. LASIK is currently the most popular procedure in civilian clinics due to the decreased level of pain, faster immediate results, and decreased haze per patient survey. Long term refractive correction and patient satisfaction are similar in LASIK and PRK.

ADVANTAGES: Prior to FDA approval, extensive clinical studies were performed to assess PRK safety and efficacy. Ten year follow- up data is available from some of the studies conducted. More recently, the pool of those eligible for treatment has expanded to include more severe forms of myopia, as well as hyperopia and astigmatism. Potentially 80-90% of people who require glasses for distance vision may be eligible for PRK. It is an effective procedure, with up to 95% of treated patients not needing glasses to achieve 20/40 distance vision or better. Approximately 75% of patients achieve 20/20 vision. The results may not be quite as good among patients with more extreme forms of myopia, hyperopia or astigmatism. The visual improvement appears to remain stable after healing from the surgery. Developing wavefront technology holds the promise of custom corneal ablations to produce “super- vision” (20/10 - the theoretical anatomic limit of vision - statistically occurs naturally more frequently in aviators attending the Navy’s Top Gun Program).

DISADVANTAGES: As with any surgical procedure, there may be side effects and complications. Most of these are short term and resolve within a few weeks post-op. Some may take longer to resolve or, in a small percentage of cases, could be permanent. These include decreased night vision, glare sensitivity, and worsening of the pre-operation best vision due to scar formation and other effects of the healing process. With both PRK and LASIK, it is not uncommon for up to 10% of patients to require retreatment with the laser to “fine tune” the desired corrective effects of the procedure.

While the final visual acuity results are identical for PRK and LASIK, there is a longer recovery time following PRK. Finally, though it is not anticipated that adverse

complications will occur 10 or more years after the surgery, there is no data available to determine what, if any, changes may develop later in life.

RESPONSIBILITIES:

Flight Surgeons/APAs: For initial applicants and newly surgically corrected aviation personnel, Flight Surgeons/APAs complete the FDME/FDHS, noting the presence of Corneal Refractory Surgery (Block 67, DD 2808), and complete the additional work-up elements below for inclusion with the FDME/FDHS in Block 73, DD2808, or once added to AERO on the page 4 . PRK and LASEK patients meeting all of the below standards may be submitted as "Qualified." PRK and LASEK patients not meeting all of the below standards along with LASIK patients will be noted as "DQ, AMS to follow" and requires submission of an abbreviated AMS for waiver or exception to policy consideration. Flight Surgeons will ensure aviation personnel with Corneal Refractive Surgery meet all annual information requirements IAW current APL.

US Army Aeromedical Research Laboratory (USAARL): USAARL will assist USAAMA in review of exception to policy or waiver requests submitted for LASIK patients for future or current aviation personnel and will provide recommendations to USAAMA. USAARL will administer the visual performance battery to applicable categories of personnel, as described below. USAARL will provide USAAMA with the data obtained for entry into the AEDR.

UPDATED STANDARDS:

PRK and LASEK are no longer disqualifying for aviation duty if the proper post-procedural requirements are met. LASIK is disqualifying, but acceptable for waiver or exception to policy if the proper post-procedural requirements and standards are met. Intracorneal and intraocular procedures are not waiverable for the Army or Army aviation

Initial Applicants (Class 1A/1W/2F/3/ 4) : Applicants undergoing PRK or LASEK may be considered qualified and noted as *Information Only* provided meeting standards. Applicants failing to meet post-operative standards with PRK or LASEK will require an AMS for exception to policy on a case by case basis. Applicants undergoing LASIK will continue to be considered for an exception to policy only as part of the USAARL research modified protocol with an accompanying AMS on a case-by-case basis.

Rated Aviation Personnel (Class 2/2F/3/4): Personnel undergoing refractive surgery must receive authorization from their commanding officer prior to the procedure. Commanders should be advised that the procedures have a 6-12 week recovery period before aviation duties can be resumed (Appendix 1).

Personnel undergoing PRK or LASEK will qualified *Information Only* provided meeting standards. Personnel failing to meet post-operative standards with PRK or LASEK will be considered *Disqualified* and require an AMS for waiver on a case by case basis. Personnel undergoing LASIK will continue to be considered for a waiver as part of the

USAARL research modified protocol with an accompanying AMS on a case-by-case basis.

INFORMATION REQUIRED for ALL TYPES OF CORNEAL REFRACTIVE SURGERIES:

- ❑ Detailed pre-operative, operative, and post-operative refractive surgery records (Appendix 2). Post-operative information from ophthalmologist or optometrist should be annotated on DD2808 (Block 73 until page 4 in AERO is established) and must include the following:

  1. Manifest refraction (at least 2 refractions one month apart to establish stability)—post-surgically, must meet standards for refraction for aviation class.
  2. Visual acuity (best corrected 20/20 each eye)—post-surgically, must meet standards for visual acuity. Personnel worse than 20/20 and correctable to 20/20 will be required to wear corrective lenses while performing aviation-related duties.
  3. Slit lamp examination documenting no residual haze or other complications.
  4. Corneal topography (post-operative topography map)—Color topography must be mailed in for review for LASIK applicants. PRK and LASEK patients require comment of "acceptable" from ophthalmologist or optometrist.
  5. Contrast Sensitivity (5% contrast using the Precision Vision backlit chart)—must pass 20/60 or better. Personnel worse than 20/60 require AMS for consideration of waiver. The preferred test is the 5% contrast test; however, the following tests may be submitted in lieu of the 5% contrast test:
     1. BVAT low contrast acuity (set on 5%)
     2. Bailey-Lovie 10% low contrast acuity test
     3. Pelli-Robson Contrast Sensitivity Test
     4. Small Letter Contrast Test
     5. VisTech or FACT Contrast Sensitivity Test

- ❑ Document that at least 3 months (for initial applicants) or 6 weeks (for current aviation personnel) have elapsed since surgery or re-treatment and evidence of stable refractive error is demonstrated by two separate examinations performed at least one month apart.

FOLLOW-UP:

The five year comprehensive flying duty medical examination (FDME) must include an optometry/ophthalmology consult with completion of a slit lamp examination of the cornea, manifest refraction, corrected visual acuity and 5% contrast sensitivity test. The 5% contrast test is not required for follow-up for classes 2F, 3, and 4 but shall be completed if available. A contrast sensitivity test is required for class 2 personnel.

TREATMENT: Per appropriate surgical protocols.

DISCUSSION:

Since allowing PRK, LASEK, and LASIK, the trend in AAMA has been that those personnel with good surgical outcomes, passing all 5 of the above post-operatively tests and standards have gone on to receive a waiver or exception to policy without subsequent aeromedical problems. Those with a less than favorable outcome have not progressed as easily to receiving a waiver or exception to policy.

Corneal refractive surgery will optimally result in less optometric support before and during deployment to Stability and Support Operations as well as combat operations.

There is a significant medical logistics "footprint" of combat health support activities providing corrective lenses and protective mask inserts that may be lessened. This is especially important in current rapid deployment, high ops tempo environments. Corneal refractive surgery is an additional benefit in the continuous development of new man-machine interfaced weapons based on routinely updated detailed vision parameters. This is especially important for increasingly complex flight environments where corrective lenses would be a hindrance.

Appendix 3 includes a vast amount of information on corneal refractive surgery and the progress of the research protocol to date. Pertinent to this APL is the vast information pertaining to LASIK candidates and should be reviewed with candidates. Advantages and disadvantages of corneal refractive surgery procedures have been identified and will be further elucidated by the continuing research. In order to do this, there are two study arms in the USAARL programs: one for accessions into aviation (which closed to new applicants 1 OCT 04) and one for active aviation personnel who desire the procedure. The accession arm will follow subjects who have had LASIK and who meet criteria specified in the USAARL protocol. The other arm will include trained aviation personnel upon whom LASIK has been performed at the US Army Aeromedical Center or a DOD medical treatment facility (IAW AR 40-3, Chapter 2-11). USAARL is responsible for providing study results and any required documentation to the Department of Defense Accessions Medical Standards Analysis and Research Activity (ASMARA) at the US Army Center for Health Promotion and Preventive Medicine (CHPPM).

APPENDIX 1. Aviation Commander's Authorization
APPENDIX 2. Medical Release and Checklist for Eye Care Provider
APPENDIX 3. Flight School Applicant Fact Sheet (undergoing editing, will be released/posted separately)

Appendix 1: Aviation Commander's Authorization

Memorandum to: Unit Flight Surgeon

CC: Ophthalmology, Refractive Surgeon

Subject: Authorization for Aircrew members to receive refractive surgery under the Aeromedical Policy Letter for Refractive Surgery and the Corneal Refractive Surgery Surveillance Program.

1. _____, SSN _____ is authorized to receive refractive surgery per the guidance outlined in the Aeromedical Policy Letter: Corneal Refractive Surgery.

2. This authorization is based on the following understandings:

a. This authorization does not constitute a medical waiver; it only authorizes the individual to have refractive surgery. The individual will be DNIF for at least 6 weeks, up to a maximum 12 weeks. The medical waiver request will be submitted to USAAMA upon receipt of information from the flight surgeon as to the successful outcome of the individual's surgical procedure. USAAMA will determine if the individual meets the medical waiver requirements when the applicant's eyes and vision meet and retain FDME standards and all requirements for waiver have been met.

b. In approximately 2-3 of every 1,000 refractive surgery procedures (0.2 to 0.3%), the individual will not recover 20/20 best-corrected vision after surgery. Individuals who fall in this category will be evaluated by USAAMA to determine whether a waiver to continue on flight status may be issued. Although slight, there is a possibility the individual may lose his/her flight status in the event of significant visual loss that cannot be resolved.

c. Questions about the program may be directed to USAARL at 334-255-6810; questions about waivers to USAAMA at 334-255-7430; questions about refractive surgery to the local eye care provider.

d. A copy of this correspondence will be kept on file in the local flight surgeon's office.

3. POC is the undersigned at _____.

Commander's Signature Block

Appendix 2: Request for Release of Medical Records

(completed by waiver applicant and provided to eye care provider for completion)

From: (enter your information) Date:

To: (enter eye clinic information)

Subject: Request for records related to refractive surgery procedure

1. Request a copy of records pertaining to my refractive surgery be provided to: (enter unit flight surgeon information and address)
2. The following information is needed (see attached Checklist for Eye Care Provider):

Date of procedure
Type of procedure (PRK, LASEK, or LASIK)
Type of laser (brand name)
Ablation parameters (size of ablation zone, microns of tissue removed, number of pulses, if available)
Amount of correction (sphere, cylinder and axis)
Pre-operative refraction and date (specify manifest or cycloplegic)
Follow- up refractions with visual acuities and dates (most current refraction and as many postoperative refractions as possible)
Slit lamp assessment of cornea (presence or absence of haze or other complications)
Latest **post-operative COLOR** corneal topography (instantaneous or tangential corneal maps)
Contrast Sensitivity (preferred test is the 5% low contrast letter acuity)

_____ _____

Typed or Printed Name Signature

Demographics Required (Applicant to complete):

Last Name: _____ First Name: _____ M.I. ____
Mailing Address: _____
_____
E-mail Address: _____
Home/Cellular Phone: _____
Date of Birth: _____ SSN: _____

Checklist for Eye Care Provider (Surgeon/Doctor to complete below):

Surgeon/Doctor's Name: _____
Clinic Address: _____
Clinic Phone: _____ Clinic Name: _____

Date of Procedure: _____ Type: (circle one) PRK or LASIK
Laser Used: (Manufacturer) _____ (Model#) _____

Ablation Parameters (Complete below, and if available, attach copies of laser printouts)
OD: Size of ablation: _____mm Tissue removed: _____microns # of pulses: _____
OS: Size of ablation: _____mm Tissue removed: _____microns # of pulses: _____

Amount of correction programmed into laser
OD: _____ OS: _____

Pre-operative Refraction
OD: _____ OS: _____

Did the applicant require any enhancement procedures? Yes _____ No _____
(If yes, provide details as above & below)

Follow-up Examinations (include most recent and 2 prior examinations—3 total)

Date:	Refraction:	Visual Acuity	Corneal Haze* (circle one)
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4
	OD_____ OS_____	OD_____ OS_____	OD 0 1 2 3 4 OS 0 1 2 3 4

***Haze 0-4 scale:** 0=No Haze, 1=Trace, 2=Minimal, 3-Moderate, 4=Iris details obscured.

Checklist for Eye Care Provider (post-operative continued)

Corneal Topography (include a color copy of most recent post-operative corneal topography using the TANGENTIAL or INSTANTANEOUS map display option)

Topographer Manufacturer: _____
Topographer Model: _____
Date of topographies: _____

Contrast Sensitivity (attach copy of post-operative results, if test available)

Test Manufacturer/Model: _____
Date of contrast test: _____

Test Conditions:
- Room Lights On? (circle one) Yes No
- Backlit Chart? (circle one) Yes No
- Distance to Test? _____ m
- % Contrast? (if letters) _____%

Results:
- OD: _____
- OS: _____

Does applicant report any subjective visual changes? (i.e. increased glare, starbursts, halos, etc.)
_____
_____

***For Class 1A/1W** (MUST complete a post-operative cycloplegic refraction, noting normal refractive DVA/NVA with best correction, and IOP's if your 1A/1W FDME data was pre-operative.)

Distant Vision	Near Vision
OD 20/_____ Corrected to 20/_____	20/_____ Corrected to 20/_____
OS 20/_____ Corrected to 20/_____	20/_____ Corrected to 20/_____

Cycloplegic Refraction

OD: _____ OS: _____

Intraocular Tension

OD: _____ OS: _____

Thank you for completing the information. Please return this form and supporting documents to your flight surgeon.